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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,687	05/30/2001	Takeshi Misawa	0905-0261P	6060

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EXAMINER

YE, LIN

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/866,687	Applicant(s) MISAWA, TAKESHI	
	Examiner Lin Ye	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 filed on 10/5/05, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/31/05 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-5 filed on 8/31/05 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe U.S. Patent 6,522,356 in view of Taniji U.S. Patent 5,485,204

Referring to claim 1, the Watanabe reference discloses in Figures 1A-C, 7, 8, 10A and 13, a solid-state electronic imaging device (300, see Col. 8, lines 1-6) comprising: a lot of photoelectric conversion elements (Pixels 1, see Col. 6, lines 1-13) arranged in the column direction and the row direction; one or more vertical transfer paths (video signal lines 3 as shown in Figure 7) for transferring signal charges respectively accumulated in said photoelectric conversion elements in the vertical direction; one or more transfer gates (e.g., the gate of the transistors 12 and 13, see Col. 9, lines 40-67) for respectively shifting the signal charges accumulated in the photoelectric conversion elements (pixels 1) to said vertical transfer paths (video signal lines 3); a horizontal transfer path (horizontal signal line 7, see Col. 8, lines 23-26) for horizontally transferring the signal charges transferred from the vertical transfer paths; color filters (100-120 in Figure 1A-C) respectively formed on the photoelectric conversion elements and arranged such that the order of color signal components respectively represented by the signal charges substantially corresponding to one row which are inputted to the horizontal transfer path in reading out all pixels is a repetition of a red signal component, a green signal component, a blue signal component, and a green signal component, and the respective timings at which the red signal component and the blue signal component are outputted in odd rows are reverse to those in even rows as shown in Figures 7-8 (See Col. 8, lines 27-42); and a readout control (Vertical scanning circuit 4 and horizontal scanning circuit 5) for applying the transfer gate pulses (ΦS) to said transfer gates such that the order of color signal components respectively represented by the signal charges

substantially corresponding to one row which are inputted to the horizontal transfer path (7) is a repetition of a red signal component, a green signal component, a blue signal component, and a green signal component in every other row, and the respective timings at which the red signal component and the blue signal component are outputted in odd rows are reverse to those in even rows as shown in Figures 7 and 8 (See Col. 8, lines 11-42 and Col. 9, lines 40-67). However, the Watanabe reference does not explicitly show a plurality of the signal charges which are adjacent to each other are mixed in the horizontal transfer path.

The Taniji reference teaches in Figure 2A, 3B and 5, a solid-state electronic imaging device comprising: a plurality of the signal charges which are adjacent to each other are mixed (summed up) in the horizontal transfer path (12) (see Col. 1, lines 25-30 and Col. 2, lines 53-57). The Taniji reference is evidence that one of ordinary skill in the art at the time to see more advantages the image device mixing adjacent signals in the horizontal transfer path so that making it possible to increase the speed of transfer and reducing resolution of image. For that reason, it would have been obvious to one of ordinary skill in the art to modify the imaging device of Watanabe ('356) for providing the method to mix adjacent signal charges in the horizontal transfer path as taught by Taniji ('204).

Referring to claim 2, the Watanabe and Taniji references disclose all subject matter as discussed in respected claim 1, and the Watanabe reference discloses photoelectric conversion elements are in a honeycomb arrangement (See Figures 1C and 7) where they are arranged in odd rows or even rows with respect to odd columns and arranged in even rows or odd rows with respect to even columns, and the color filters (100, 110 and 120) which allow the transmission of a green light component are respectively arranged in said photoelectric

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conversion elements in odd rows or even rows, and the color filters which allow the transmission of a blue or red light component are alternately arranged for each column and for each row in said photoelectric conversion elements in even rows or odd rows (See Col. 6, lines 25).

Referring to claim 3, the Watanabe and Taniji references disclose all subject matter as discussed in respected claim 1, and Both the Watanabe and Taniji references disclose wherein said color filters are in a G-stripe R/B checkered arrangement (e.g., see Watanabe's Figure 1A-B and 7, Taniji's Figures 6A-B) where the color filters which allow the transmission of a green light component are arranged in a vertical stripe shape, and the color filters which allow the transmission of a blue or red light component are arranged in a checkered shape.

Referring to claim 4, the Watanabe and Taniji references disclose all subject matter as discussed in respected with same comments to claim 1.

Referring to claim 5, the Watanabe reference discloses in Figures 1A-C, 7, 8, 10A and 13, a method of controlling signals from a photoelectric conversion element array in Figure 7, comprising: arranging a plurality of photoelectric conversion elements (Pixels 1, see Col. 6, lines 1-13), each photoelectric conversion element producing a color signal, in adjacent offset rows and columns, such that each adjacent row and column is comprised of either photoelectric conversion elements producing only a green color signal (g pixel group) or photoelectric conversion elements that produce in an alternating sequence, a red color signal and a blue color signal (rb pixel group); controlling a readout of the color signals from the photoelectric conversion elements using transfer gate pulses (ΦS) associated with transfer

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gates for shifting the color signals to vertical transfer path (video signal line 3) adjacent to each column and the transfer of the color signals from the vertical transfer path to a horizontal path (horizontal signal line 7); and mixing the green color signals, red color signals and blue color signals from adjacent rows (e.g., two rows of pixel groups, such as g pixel group and rb pixel group are mixing-zigzag manner) so that the order of the color signals in the horizontal transfer path is a repetition of a red color signal, green color signal, blue color signal and green color signal in every other row, and the respective timings at which the red signal component and blue signal component are outputted in odd rows are reverse to those in even rows (See Col. 8, lines 11-42 and Col. 9, lines 40-67). However, the Watanabe reference does not explicitly show a plurality of the signal charges which are adjacent to each other are mixed in the horizontal transfer path.

The Taniji reference teaches in Figure 2A, 3B and 5, a solid-state electronic imaging device comprising: a plurality of the signal charges which are adjacent to each other are mixed (summed up) in the horizontal transfer path (12) (see Col. 1, lines 25-30 and Col. 2, lines 53-57). The Taniji reference is evidence that one of ordinary skill in the art at the time to see more advantages the image device mixing adjacent signals in the horizontal transfer path so that making it possible to increase the speed of transfer and reducing resolution of image. For that reason, it would have been obvious to one of ordinary skill in the art to modify the imaging device of Watanabe ('356) for providing the method to mix adjacent signal charges in the horizontal transfer path as taught by Taniji ('204).

Conclusion

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is (571) 272-7372. The examiner can normally be reached on Mon-Fri 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lin Ye
Examiner
Art Unit 2615

November 22, 2005